Nantucket Electric Company
Docket No. D.T.E. 04-10
Responses to the Department's First Set of Information Requests

Information Request DTE-W-1

Request:

Please refer to PH Tr. 1 at 19 to 20. Please indicate whether liquification of ocean sediments by a jet sled to create a trench for installation of the proposed submarine cable may result in subsequent shifting of affected sediments at a greater or faster rate than before or without liquification.

Response:

The liquefaction of the sediments by the jet plow would increase the turbidity of the water in the vicinity of the liquefied trench. Any disturbance of sediments from the jet plow would be for a very limited duration. The finer grains of sand will settle on either side of the trench after the jet plow passes. Once the sediments settle, shifting of the sediments previously affected by the jet plow would return to the pre-construction rate, prior to disturbance. Tidal action and water currents would naturally restore the disturbed area to its original contours.

Prepared by or under the supervision of: F. Paul Richards

Information Request DTE-W-2

Request:

Please submit maps of the submarine (from landfall to landfall, at mean high water) portion of the transmission line along the preferred and alternative routes. On the identified maps, please indicate the following, within one-half mile of the route:

(a) all commercial shellfish beds;
(b) all non-commercial shellfish beds;
(c) all shellfish areas mapped by the local shellfish warden or other comparable state or local official;
(d) all land containing shellfish, as defined under G.L. c. 131, § 40, or under a local wetlands ordinance or bylaw;
(e) all areas of shellfish propagation or management.

Response:

Figures A-22 and A-23 of Exhibit FPR-1 illustrate all shellfish beds within one half mile of the preferred and alternative submarine routes. These data are based on the MassGIS shellfish layer that was developed by the state with input from local marine departments, shellfish wardens, harbormasters, and local fishermen. Shellfish resources are generally in the nearshore shallow waters of the Sound. There is anecdotal information about quahog grounds offshore, mid-Sound, near shoal areas for which there is some dragging for surf clams and quahogs. There is no apparent mapping or catch data for this area. For more site-specific information, see the response to DTE-W-3.

Prepared by or under the supervision of: F. Paul Richards

Information Request DTE-W-3

Request:

For each shellfish area listed in your answer to DTE-W-2, please discuss:

(a) the type and significance of the shellfish community identified;
(b) whether the productivity of the area has been increasing or decreasing over the past five years.

Response:

A discussion of the shellfish bed types and quality for each shoreline is provided below.

Barnstable Shellfish Beds - Hyannis Harbor is identified as a shellfish bed, according to MassGIS database. Both the preferred and alternative routes cross through this bed. This area contains soft shell clams, quahogs, and scallops. The delineation of this bed and type of shellfish was confirmed by the eelgrass and shellfish survey conducted by Normandeau Associates for Nantucket Electric Company in the vicinity of the preferred alignment in Hyannis Harbor. This survey identified mollusks, crustaceans, and commercially important bay scallops and quahogs. There is no commercial harvesting in Hyannis Harbor. Based on consultation with the Barnstable Natural Resource Department (BNRD), all of the beds from Centerville Harbor to the east past Lewis Bay have been closed by the state. BNRD officials were aware of some limited harvesting by individuals with shellfish licenses of quahogs and bay scallops in the vicinity of Kalmus Beach. Since there is no commercial harvesting allowed, the productivity of these beds is unknown. Consultation with BNRD indicated that the beds are most likely stable populations.

Nantucket Shellfish Beds

Preferred - Jetties Beach - There are no mapped shellfish beds identified in the vicinity of Jetties Beach. This was confirmed by the eelgrass and shellfish survey conducted by Normandeau Associates for Nantucket Electric Company in the vicinity of the preferred alignment off Jetties Beach. The closest bed is located 1,200 feet to the east, on the east side the west jetty marking the entrance to Nantucket Harbor. This bed consists primarily of soft shell clams, although quahogs and bay scallops have been found within this bed. This bed is open to harvesting. Based on consultation with the Harbor Master, all of the shellfish beds in Nantucket Harbor have been improving over the past five years as the water quality in the harbor has improved. It is very unlikely that the proposed project would have any impact to this resource due to the distance from the proposed alignment and the presence of a rock jetty between the project and the shellfish bed.

Alternate Alignment - Coatue and Nantucket Harbor - There are active shellfish beds offshore of Coatue and in the harbor within one half mile of the alignment. Based on consultation with the Harbormaster and local shellfishermen, the most productive bed is located off the southeast shores of Coatue. All the beds within one-half mile of the alignments consist primarily of soft shell clams, although quahogs and bay scallops also occur in these areas. These beds are open to harvesting. The Harbormaster has seen year-by-year increases in the amount of shellfish harvested as the water quality of the harbor continues to improve.

Prepared by or under the supervision of: F. Paul Richards

Information Request DTE-W-4

Request:

Please indicate if construction or operation of the proposed project either in the vicinity of
Lewis or Nantucket Bay would be proximate to an anadromous fish run.

Response:

There is an anadromous fish run identified by MassGIS in Mill Creek in the northern portion of Lewis Bay. Anadromous fish species migrate in the spring coincident with spring freshets and rising water temperatures. It is assumed that the construction window for the marine installation of the cable will be the fall to winter period, a time when anadromous fishes should be migrating south or would have already left the area. The cable would be approximately 700-800 yards from the bayside end of Dunbar Point. The entrance to Lewis Bay is approximately 1,000 yards across. Therefore the project is not considered proximate to the anadromous fish run into Lewis Bay.

From the MassGIS database, it does not appear that there are any anadromous fish runs in Nantucket Harbor.

Prepared by or under the supervision of: F. Paul Richards

Information Request DTE-W-5

Request:

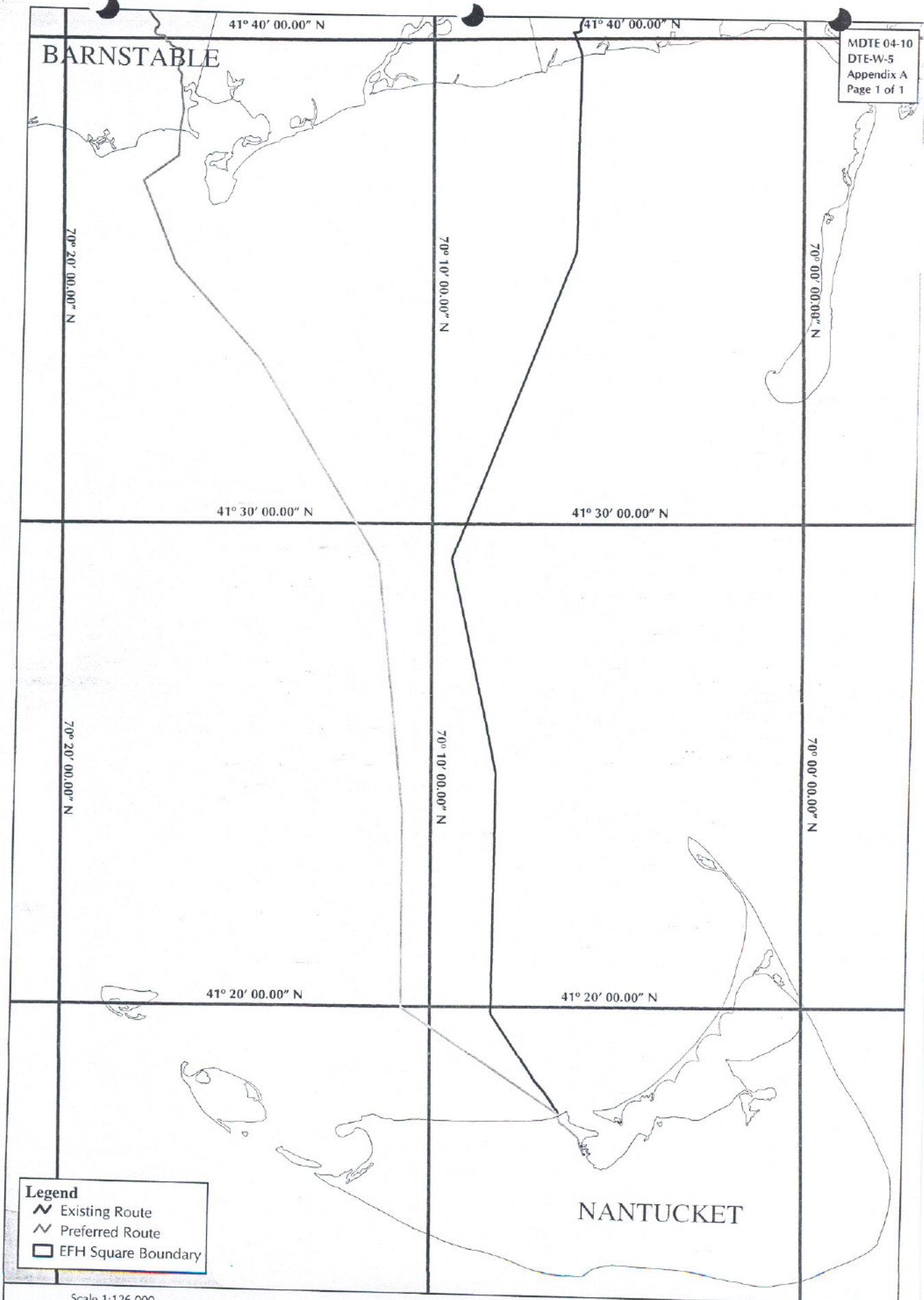
Please submit a map of Nantucket Sound showing areas proximate to the proposed and alternative transmission line routes, if any, where demersal and pelagic fish may likely migrate, feed, or spawn.

Response:

Appendix A to DTE-W-5 illustrates the location of the preferred and alternative submarine cable routes in relation to 10-minute squares depicted on nautical charts of Nantucket Sound. The squares, important for marine navigation, are also used by the National Marine Fisheries Service to identify occurrence of fish species and lifestages of Essential Fish Habitat (EFH) as defined by the Magnuson-Stevens Fishery Management Act. Tables 1-4 in DTE-W-5 Appendix B list the species and lifestage designations for EFH Squares.

Given the anticipated fall to winter construction window for submarine installation, fish activity associated with migration and feeding will be minimal. Spawning is primarily a springtime event so spawning grounds, if any, will not likely be impacted.

Prepared by or under the supervision of: F. Paul Richards



10-Minute Squares

Nantucket Cable Project
Nantucket, Massachusetts

Nantucket Electric
A National Grid Company

EPSILON ASSOCIATES INC.
Engineers Environmental Consultants

C:/projects/nantucket/78901/DTE_filing/Requests/10_minute_squares_routes_11x17.mxd

08/17/04

Table 1: Finfish Species Collected by DMF in Project Area – 1978 to 2002

Common Name	Scientific Name	Seasonal Occurrence
ROUGHTAIL STINGRAY	DASYATIS CENTROURA	Fall
SMOOTH DOGFISH	MUSTELUS CANIS	Spring, Fall
SPINY DOGFISH	SQUALUS ACANTHIAS	Spring, Fall
WINTER SKATE	LEUCORAJA OCELLATA	Spring, Fall
LITTLE SKATE	LEUCORAJA ERINACEA	Spring, Fall
THORNY SKATE	AMBLYRAJA RADIATA	Spring
ATLANTIC HERRING	CLUPEA HARENGUS	Spring, Fall
ALEWIFE	ALOSA PSEUDOHARENGUS	Spring, Fall
BLUEBACK HERRING	ALOSA AESTIVALIS	Spring, Fall
AMERICAN SHAD	ALOSA SAPIDISSIMA	Spring
ATLANTIC MENHADEN	BREVOORTIA TYRANNUS	Spring, Fall
BAY ANCHOVY	ANCHOA MITCHILLI	Fall
STRIPED ANCHOVY	ANCHOA HEPSETUS	Fall
RAINBOW SMELT	OSMERUS MORDAX	Spring
SILVER HAKE	MERLUCCIUS BILINEARIS	Spring, Fall
ATLANTIC COD	GADUS MORHUA	Spring
HADDOCK	MELANOGRAMMUS AEGLEFINUS	Spring
POLLOCK	POLLACHIUS VIRENS	Spring
WHITE HAKE	UROPHYCIS TENUIS	Spring, Fall
RED HAKE	UROPHYCIS CHUSS	Spring, Fall
SPOTTED HAKE	UROPHYCIS REGIA	Spring, Fall
FOURBEARD ROCKLING	ENCHELYOPUS CIMBRIUS	Spring, Fall
SUMMER FLOUNDER	PARALICHTHYS DENTATUS	Spring, Fall
FOURSPOT FLOUNDER	PARALICHTHYS OBLONGUS	Spring, Fall
YELLOWTAIL FLOUNDER	LIMANDA FERRUGINEA	Spring
WINTER FLOUNDER	PSEUDOPLEURONECTES AMERICANUS	Spring, Fall
WINDOWPANE	SCOPHTHALMUS AQUOSUS	Spring, Fall
GULF STREAM FLOUNDER	CITHARICHTHYS ARCTIFRONS	Spring, Fall
ATLANTIC SILVERSIDE	MENIDIA MENIDIA	Spring
NORTHERN PIPEFISH	SYNGNATHUS FUSCUS	Spring, Fall
SMALLMOUTH FLOUNDER	ETROPUS MICROSTOMUS	Spring, Fall
HOGCHOKER	TRINECTES MACULATUS	Fall
BLUESPOTTED CORNETFISH	FISTULARIA TABACARIA	Fall
ATLANTIC MACKEREL	SCOMBER SCOMBRUS	Spring
BLUE RUNNER	CARANX CRYSOS	Fall
BUTTERFISH	PEPRILUS TRIACANTHUS	Spring, Fall
ATLANTIC MOONFISH	SELENE SETAPINNIS	Fall
BIGEYE	PRIACANTHUS ARENATUS	Fall
BLUEFISH	POMATOMUS SALTATRIX	Spring, Fall
STRIPED BASS	MORONE SAXATILIS	Spring, Fall

Table 1: Finfish Species Collected by DMF in Project Area – 1978 to 2002 (Continued)

Common Name	Scientific Name	Seasonal Occurrence
BLACK SEA BASS	CENTROPRISTIS STRIATA	Spring, Fall
SCUP	STENOTOMUS CHRYSOPS	Spring, Fall
WEAKFISH	CYNOSCION REGALIS	Fall
NORTHERN KINGFISH	MENTICIRRHUS SAXATILIS	Spring, Fall
SPOT	LEIOSTOMUS XANTHURUS	Fall
LONGHORN SCULPIN	MYOXOCEPHALUS OCTODECEMSPINOSUS	Spring
SEA RAVEN	HEMITRIPTERUS AMERICANUS	Spring, Fall
ALLIGATORFISH	ASPIDOPHOROIDES MONOPTERYGIUS	Spring
GRUBBY	MYOXOCEPHALUS AENAEUS	Spring
LUMPFISH	CYCLOPTERUS LUMPUS	Spring
NORTHERN SEAROBIN	PRIONOTUS CAROLINUS	Spring, Fall
STRIPED SEAROBIN	PRIONOTUS EVOLANS	Spring, Fall
FLYING GURNARD	DACTYLOPTERUS VOLITANS	Fall
TAUTOG	TAUTOGA ONITIS	Spring, Fall
ROCK GUNNEL	PHOLIS GUNNELLUS	Spring, Fall
NORTHERN SAND LANCE	AMMODYTES DUBIUS	Spring, Fall
SNAKEBLENNY	LUMPENUS LUMPRETAEFORMIS	Spring
RED GOATFISH	MULLUS AURATUS	Fall
OCEAN POUT	MACROZOARCES AMERICANUS	Spring
NORTHERN PUFFER	SPHOEROIDES MACULATUS	Fall
GOOSEFISH	LOPHIUS AMERICANUS	Spring
PLANEHEAD FILEFISH	MONACANTHUS HISPIDUS	Fall
GRAY TRIGGERFISH	BALISTES CAPRISCUS	Fall
BANDED RUDDERFISH	SERIOLA ZONATA	Fall
MACKEREL SCAD	DECAPTERUS MACARELLUS	Fall
BIGEYE SCAD	SELAR CRUMENOPHTHALMUS	Fall
ROUGH SCAD	TRACHURUS LATHAMI	Fall
ROUGHTAIL STINGRAY	DASYATIS CENTROURA	Fall
INSHORE LIZARDFISH	SYNODUS FOETENS	Fall
SNAKEFISH	TRACHINOCEPHALUS MYOPS	Fall
ROCK HIND	EPINEPHELUS ADSCENSIONIS	Fall
SNOWY GROUPER	EPINEPHELUS NIVEATUS	Fall
SHORT BIGEYE	PRISTIGENYS ALTA	Fall
AFRICAN POMPANO	ALECTIS CILIARIS	Fall
NORTHERN SENNET	SPHYRAENA BOREALIS	Fall
GUAGUANCHE	SPHYRAENA GUACHANCHO	Fall
GOBY UNCL	GOBIIDAE	Fall
ORANGE FILEFISH	ALUTERUS SCHOEPFI	Fall
LIZARDFISH UNCL	SYNODONTIDAE	Fall

Table 2 Finfish Species Collected in DMF Trawl Survey (1978-2002)

Common Name	Scientific Name	Percentage (catch by weight)
3Scup	*Stenotomus chrysops*	17.2
Northern searobin	*Prionotus carolinus*	16.5
Winter skate	*Leucoraja ocellata*	14.4
Little skate	*Leucoraja erinacea*	11.9
Windowpane	*Scophthalmus aquosus*	10.6
Smooth dogfish	*Mustelus canis*	7.8
Winter flounder	*Pseudopleuronectes americanus*	6.2
Butterfish	*Peprilus triacanthus*	4.2
Spiny dogfish	*Squalus acanthias*	2.7

Table 3 Finfish Species Collected in DMF Trawl Survey (1978-2002) in Spring

Common Name	Scientific Name	Percentage (of catch weight)
Northern searobin	*Prionotus carolinus*	26.8
Windowpane	*Scophthalmus aquosus*	17.8
Winter skate	*Leucoraja ocellata*	14.7
Little skate	*Leucoraja erinacea*	10.9
Winter flounder	*Pseudopleuronectes americanus*	10.3
Spiny dogfish	*Squalus acanthias*	4.1
Scup	*Stenotomus chrysops*	3.8
Tautog	*Tautoga onitis*	3.5

Table 4 Finfish Species Collected in DMF Trawl Survey (1978-2002) in Fall

Common Name	Scientific Name	Percentage (of catch weight)
Scup	*Stenotomus chrysops*	36.0
Smooth dogfish	*Mustelus canis*	16.5
Winter skate	*Leucoraja ocellata*	13.8
Little skate	*Leucoraja erinacea*	13.3
Butterfish	*Peprilus triacanthus*	8.7
Summer flounder	*Paralichthys dentatus*	3.8

Information Request DTE-W-6

Request:

(a) Please indicate the extent to which the proposed project construction schedule prevents or mitigates impacts to fisheries.

(b) Please discuss the extent to which further reduction in impacts to fisheries would be possible by modifying the proposed construction schedule, if any. Please explain if the Company can consider such modifications and if not, why not.

Response:

a) The proposed submarine construction will likely be scheduled for fall, a time period that is conducive to seasonal migrations south or reduced activity for year-round resident fish species.

b) There are no further construction schedule changes that could reduce potential impacts to fisheries. Fall is the preferred time to construct because fish activity is winding down and installation can be done quickly and safely. Winter construction would be avoided if possible due to safety and likely prolonged installation. Ultimately, the construction schedule would be established by conditions contained in various environmental permits.

Prepared by or under the supervision of: F. Paul Richards

Information Request DTE-W-7

Request:

Please compare the amounts and impacts of suspended sediment that the proposed project would generate against that generated by fishing gear, bottom currents, waves, and tides.

Response:

The proposed project would result in less suspension of sediments as compared to fishing gear, bottom currents, waves, and tides for three main reasons: (1) The energy expended that could suspend sediments during installation of the cable is much less than that involved with the four events identified, resulting in much less disturbance of sediments. (2) The area disturbed for the installation of the cable is much less than the area of the seabed disturbed by any of such equipment or event. Suspension of sediments would be within a localized area around the trench. Wave action occurs along all nearshore areas of the Sound. Commercial fishing activities that occur further offshore require dragging equipment along the seabed. These activities temporary disturb much wider swath of the seabed, an area much larger than the area disturbed by cable installation. Bottom currents and tidal action occur across the entire Sound, once again a much larger area than the cable installation. (3) Installation of the submarine cable is a one-time event of a short duration that would be completed within 4 to 6 weeks. The other events identified occur on a regular basis, continually modifying the seabed of Nantucket Sound.

Prepared by or under the supervision of: F. Paul Richards

Information Request DTE-W-8

Request:

Please discuss possible impacts on fish and marine mammal habitat and migration, if any, of underwater vibration and noise that would occur with submarine installation of the proposed transmission line. Please describe any studies used by the Company to evaluate such impacts.

Response:

With respect to marine mammals (whales and seals), Nantucket Sound is not a prime habitat. Whales are highly migratory, entering northern waters during the warmer periods to feed primarily in Cape Cod Bay and the Gulf of Maine. Harbor seals are transient, generally migrating south from the Gulf of Maine in the winter. Gray seals reside year-round, but in low numbers.

Thus, with respect to noise and underwater vibration associated with cable installation, whales would not be impacted because they would be absent from the area during installation.

Seals might hear the various propeller and jet plow noises and vibrations, but are not likely to be affected because of the similar sounds associated with the ferry lines and cargo barges that routinely ply those waters from Hyannis to Nantucket year round. The extremely slow-moving cable-laying barge and associated tugs are not expected to disturb the few seals that might be in the vicinity for the four to six weeks of cable laying. Neither Kalmus nor Jetties Beach is a known haul-out area.

Fish are able to hear and pick up vibrations both through their otoliths (ear bones) and through the lateral line system which is a unique set of hairs and pores along the sides of fish that detect vibration. Thus, fish are acutely aware of sound and pressure changes. Similar to whales, many fish species are transient to the area and will have migrated south prior to the proposed period for construction. Those that remain are usually less active during the colder months as their metabolism is dependent upon water temperature. A few species such as pollock and cod are relatively active and may react to the cable laying operation.

It is expected that if the propeller sounds are annoying, that the fish will simply abandon the area during the brief construction period. Some of the sounds will be familiar as the Hyannis to Nantucket navigation route is open all year, weather permitting. Vibrations associated with the jet plow might be similar to otter trawl doors dragging along the seabed, albeit at a much slower rate.

In summary, cable laying is expected to occur in the fall-winter period and many species will have left the Sound as they are only warmer water, seasonal visitors. Activity levels are usually lower in the winter, at least for the fishes; therefore the likelihood of any possible widespread annoyance with the jet plowing activity should be very limited. The installation process is slow and deliberate so that it is highly unlikely that fishes or seals would be inadvertently impacted such as occurs during trawling or possibly during ferry transits.

Prepared by or under the supervision of: F. Paul Richards

Nantucket Electric Company
Docket No. D.T.E. 04-10
Responses to the Department's First Set of Information Requests
Information Request DTE-W-9

Request:

Please indicate whether the Company has conducted, or anticipates conducting, bioassay testing to gauge potential biological impacts from suspension of contaminated sediments that would likely occur with submarine installation of the proposed transmission line. If the Company has conducted bioassay testing, please characterize results. Please explain why the Company does not anticipate conducting bioassay testing if such is the case.

Response:

The Company has consulted with all federal, state and local agencies with jurisdiction over offshore permitting for the installation of the proposed cable (see Table A-6 in Exhibit FPR-1). Based on advice from these agency experts, a bioassay was not recommended for this project. Sediment samples were collected and tested as recommended by the Department of Environmental Protection, Division of Water Pollution Control. Prior to the initiation of the field investigations, protocols were developed for the collection, handling, storage, and testing of the sediment samples with personnel from the Division of Water Pollution Control. Results of the analysis are included in Table 1.

The DEP has established classifications for dredged material to determine appropriate disposal options. Although this project does not include dredging or dredge disposal, it is instructive to compare the quality of the materials tested within the submarine cable alignment in Nantucket Sound to these dredging quality standards. Please see Appendix A to DTE-W-9. Four of the five samples collected are classified quality as Category 1 and one sample is Category 2 (based on elevated lead and mercury levels). These are the cleanest categories for dredged materials. Based on the low levels of contaminates identified, installation of the submarine cable presents no significant contaminate risk that could result in a degradation of water quality.

Prepared by or under the supervision of: F. Paul Richards

DTE-W-9: Classification of Dredge Material by Chemical Constituents – DEP-DWPC Criteria

Parameter	Category One Classification (ppm)	NC-10	NC-20	NC-20A	NC-160	NC-230
As	<10	1.4	1.5	12	1.2	0.81
Cd	<5	0.035	0.1	0.9	U[1]	U
Cr	<100	4.0	3.6	26.0	3.0	1.4
Cu	<200	2.70	6.80	82.00	0.64	0.53
Pb	<100	2.10	10.00	130.00[3]	1.40	0.67
Hg	<0.5	U	0.0480	0.6300	U	U
Ni	<50	3.1	1.8	14.0	1.4	2.5
PCB	<0.5	U	U	0.31	U	U
V	<75	NT[2]	NT	NT	NT	NT
Zn	<200	7.0	14.0	140.0	3.9	5.0
Sample Category		Category 1	Category 1	Category 2	Category 1	Category 1

1. Below detection Limits
2. Not Tested
3. Only exceedances of Category 1